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ABSTRACT

This document presents the student guide for a course designed to introduce students to oceanographic research techniques. The course combines lecture-demonstration, field trips, and independent study, and is graded based upon a final exam and a student research paper. (SL)

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INTRODUCTION TO OCEAN RESEARCH (OC-31)

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INTRODUCTION

Introduction to Ocean Research is primarily an independent study course. It was designed to introduce the student to near shore and intertidal research methodology. Other design intents were to introduce the student to library searching skills, to provide the student with experience collecting, analyzing, and interpreting data, and to provide the student with experience writing an ocean research paper.

The course assumes a background in introductory oceanography. Students without the requisite background may register with the permission of the instructor. However, unless students in this second category can verbally demonstrate to the instructor a facility with the concepts of introductory oceanography, they will not be registered without having previously taken an introductory chemistry course.

OBJECTIVES

As a result of active and indepth participation in this course, the student should be able to:

1. Name by title and describe generally the types of research articles published in at least 10 Marine related journals.
2. Search for research related to a specific subject using one or more abstracting services.
3. Collect data in the intertidal zone.
4. Analyze and interpret data which has been collected.
5. Present data in graph, table, chart, and histogram formats.
6. Write an ocean research paper based upon evidence collected through literature searches and data collected from intertidal and near shore areas.

COURSE CONDUCT

While the course is essentially conducted on an independent study basis, the first two or three weeks of the course will be conducted on a lecture-discussion, field trip basis. The topics of discussion during this beginning period will concentrate

upon types of ocean research, sources of ocean research information, methods of data collection and record keeping, organismal inter-relationships in the intertidal zone, methods used in locating gaps in existing literature, literature searching skills, and research paper formats.

Ocean Research is a 3-credit-hour laboratory course. Accordingly, during the first two to three weeks, the student should plan to spend 4 hours of in-class time each week and at least one hour of class for each in-class hour.

After the beginning lecture weeks, the course becomes independent study. It is recommended that once the independent study period begins, and for the remainder of the course that the student spend at least 7 hours each week working on his or her project. In addition, one hour each week will be spent with the instructor.

The weekly hour spent with the instructor will be a tutorial. These meetings will be at a time mutually agreed upon by the instructor and the student. It is, however, the student's obligation to pursue the time arrangement.

The topic of discussion at the weekly meetings will be the student research project. Project progress will be evaluated, research problems discussed, and research project guidance given.

The Research Project. Students must have identified an area of interest by the end of the third week of the semester. Once the area has been identified, the student must write a brief research proposal and submit it for the instructor's approval. The research proposal should outline the problem, present an hypothesis which might lead to the problem's solution, and methods by which the student plans to test the hypothesis (data gathering methods, etc.). Upon project approval he or she may begin the actual data collecting tasks.

The culmination of the research project is the writing of the research paper. The following format should be used when writing the paper, i. e., the paper should be divided into the following sections:

TITLE PAGE

The title page contains the title of the article, the author's name, the author's institutional affiliation, the address of the institution, and the date of writing.

INTRODUCTION

This section briefly reviews what is already known about the subject being investigated (information obtained from literature searching), and the objectives of the study which you have undertaken.

METHODS

Here, the author discusses the methods which were used in the data collection process.

DATA OR RESULTS

In this section, the author presents the data which he or she has collected. The data should be presented in both written form and through the use of graphs, tables, charts, histograms, etc.

DISCUSSION

The data which was collected is discussed here. It should be discussed as an entity as well as being compared and contrasted with the information presented in the Introduction section.

CONCLUSIONS

What conclusions can you make as a result of the research project? Has the original problem, asked at the onset of the research, been answered? These and other similarly related questions should be answered here.

SUGGESTIONS FOR FURTHER RESEARCH

As a result of your study and your findings, what suggestions can you make concerning additional research in the area and/or areas closely related to your research project? These should be suggestions that will further man's knowledge in the area.

REFERENCES

All references cited in the context of the paper should be given a full bibliographical citation here.

The paper should be typewritten, double spaced, and be of a length sufficient to adequately cover the subject yet not be so long as to be verbose. It should be written in the third person, past tense (remember, you are reporting results of a study that has already been conducted). Finally, in context citations and questions of style should be handled in accordance with the publication listed in the text section of this syllabus.

EXAMINATIONS

There is one examination during the course period. That examination will be over the objectives listed above in the Objectives section, and will be a final examination.

COURSE GRADING

The course final grade will be based upon the research paper, and the results of the final examination. One may assume that he or she will receive a final grade of "A" if:

1. The objectives of the course have been met, as demonstrated by the results of the final examination.
2. The objectives of the course have been met as demonstrated by the results of the research paper.

COURSE TIME LINE

Two time requirements must be met. First, the research project proposal must be submitted prior to the end of the third week of classes following the beginning of the semester. Second, all research papers must be submitted, in their final form, prior to the beginning of the last week of the semester.

STUDENT TEXT

Allen, E. D., and Colburn, E. B., *A Short Guide to Writing a Research Paper: Manuscript Form and Documentation*, revised edition. Everett-Edwards, Deland, Florida, 1975.